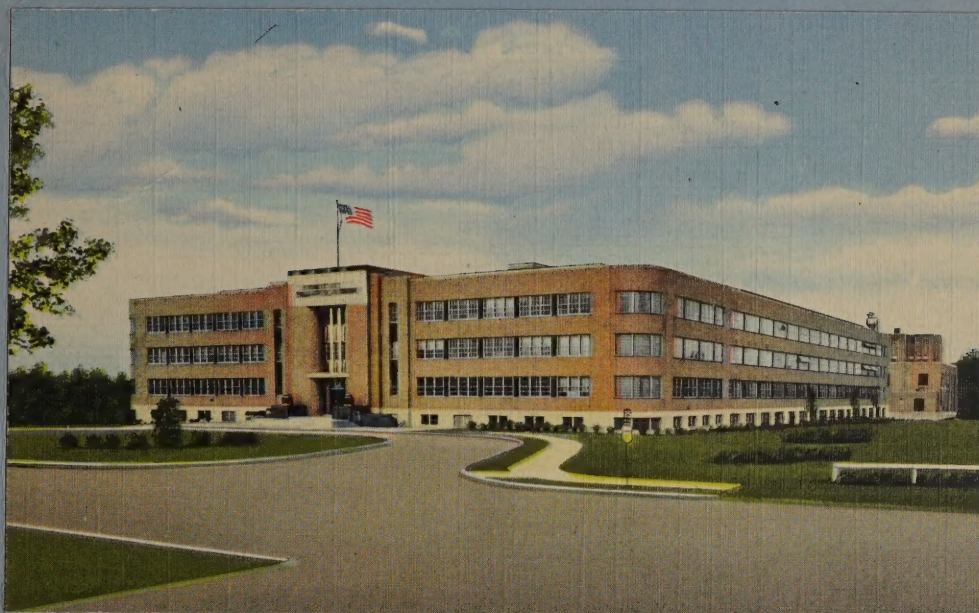


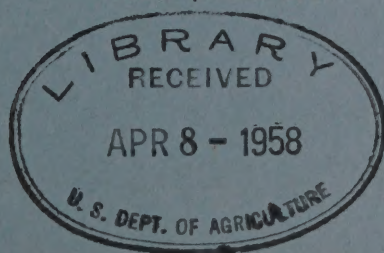
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✓ U.S. NORTHERN REGIONAL RESEARCH LABORATORY, Peoria, Ill.
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UNITED STATES
DEPARTMENT OF AGRICULTURE



One of the four Regional Research Laboratories created by Congress in 1938 to search, through Chemistry, for wider industrial use of agricultural products.



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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural and Industrial Chemistry

Northern Regional Research Laboratory

Peoria, Illinois

A NEW TYPE LABORATORY

The Northern Regional Research Laboratory is an industrial type laboratory which works exclusively on finding a place for agricultural raw materials in new fields of industrial utilization. However, fundamental research does play a part in the over-all program. Work originates on a small laboratory scale--the "test tube" stage. Chemists, bacteriologists, and other scientists are employed on this work. If results prove promising, the projects are taken to the pilot plant, the semi-plant scale of development, where Chemical Engineers carry the problem to the stage of introduction to industry.

TYPICAL LINES OF WORK

The Northern Regional Research Laboratory is conducting chemical and chemical engineering research on corn, wheat, and other cereal crops; soybeans, and other oilseed crops; and agricultural residues. The latter project is national in scope.

Because of the very definite general resemblance among these commodities, the work program is laid out largely on the basis of the constituents of the commodities. For example, both the

cereal crops and the oilseed crops contain oil and protein, and starch is present in all the cereal crops. Although the agricultural residues are quite different, the general composition of the individual residues does not vary greatly, and they can be studied by similar methods. Looking at the commodities from another point of view, we find that they lend themselves readily to fermentation studies, analytical and physical chemical techniques, and engineering and development and general commodity studies.

RESEARCH DIVISIONS: Therefore, we find the Laboratory is organized on a divisional basis as follows: Agricultural residues, starch and dextrose, oil and protein, fermentation, motor fuel evaluation, commodity development, engineering and development, and analytical and physical chemical divisions.

The Laboratory research program is far-reaching in scope including much fundamental and developmental work which goes far beyond formulation and empirical experimentation. It involves the sciences of organic and physical chemistry, biochemistry, botany, bacteriology, microbiology, and mechanical and chemical engineering, truly offering a challenge to those prepared to meet it.

ACCOMPLISHMENTS OF THE LABORATORY

Over the past several years, the Northern Regional Research Laboratory has made contributions to fundamental and applied research in many fields. Many developments have been introduced into industry. The following are examples

of some of these accomplishments: Mass production of penicillin; the Batter process for starch and gluten; butylene glycol, a material resembling glycerine in its properties, and produced by the action of certain microorganisms on carbohydrates of cereal crops; butadiene from butylene glycol; Norepol, a rubber substitute made from soybean oil; Norelac, a lacquer-like substance used for moisture-vapor-proof coatings of papers for food wrapping; Noreplast, a plastic containing agricultural residues; Noreseal, a cork substitute; soft grit blasting material from agricultural residues; waterproof plywood glue; process for wet milling of wheat; byproduct feed from penicillin wastes; zein textile fiber; riboflavin concentrates, starch sponge; improved drying oil from soybeans; and production of sugars and solvents by the saccharification of agricultural residues.

Of interest to bacteriologists and other scientists is a large culture collection of potentially useful yeasts, molds, and bacteria, which is the largest in the United States and probably in the world. These organisms are useful in converting agricultural commodities into useful industrial chemicals by means of fermentation processes.

ATTRACTIVE POSITIONS

For this work a full range of research scientists are employed from the P-1 Junior Scientist on up from P-2 to P-5. The P-5's are heads of research sections. All of them conduct research with varying degrees of responsibility and scope.

The Junior Scientists work as the assistants and often have opportunity to work on the preliminary phases of research problems. One desirable feature of our work is the opportunity to pursue a research problem through its various phases to completion.

OTHER ATTRACTIVE FEATURES

Our staff has considerable freedom to approach problems from both fundamental and practical viewpoints. We have the best equipment for both laboratory and pilot-plant investigations. Our scientists enjoy the privileges of publishing their results in full, and frequently have opportunities to present papers at scientific and technical meetings. This participation enhances their scientific reputation. Approximately 250 articles of our staff have been published in scientific and technical journals during the past few years.

WORKING CONDITIONS ARE EXCELLENT. The Laboratory hours are from 8 a.m. to 5 p.m., Monday through Friday, with an hour off for lunch. We are granted 26 working days' vacation leave with pay, and when needed, up to 15 days' sick leave with pay, in addition to a liberal schedule of holidays.

RETIREMENT BENEFITS are particularly attractive for those who remain in the service. Recently Congress passed a bill revising the present retirement law by increasing the benefits and incorporating other attractive provisions. Employees contribute 6 percent of their salary annually to building up this fund. The Government provides an additional $6\frac{1}{2}$ percent for an attractive retirement plan.

AWARDS are made to employees throughout the Department of Agriculture in recognition of length of service, superior service, and distinguished service. The coveted distinguished service citation is awarded to individuals, teams, or project groups for achievements constituting notably outstanding contributions to agriculture or to the public service. Such awards may be for major contributions to science, distinguished authorship, and notably creative service. The Laboratory Penicillin Team received a Distinguished Service Award.

OPPORTUNITIES FOR ADVANCEMENT: Periodic promotions amounting to \$125 each year for grades P-1 to P-3, \$250 each 18 months for grade P-4, and \$240 each 18 months for grade P-5 are granted for satisfactory service.

Since the Laboratory is expanding its program and personnel, there are good opportunities for grade advancements for those who have the required scientific training and experience and perform satisfactory service. Advancement beyond the P-1 grade depends largely on the ability and work experience and other qualifications of the employee, for higher grade positions which become vacant.

OPPORTUNITIES FOR ADVANCED STUDY are excellent: The Laboratory has the finest type of technical and scientific library facilities, including approximately 6,000 technical and scientific volumes and 260 foreign and American scientific journals. From time to time, staff members conduct training seminars for their employees. Leaders of our research staff are outstanding authorities in their field, and, as a rule, enjoy a national or international reputation.

Bradley University, located in Peoria, is gradually expanding her Chemistry Department, and is currently offering evening courses for advanced students, leading to the Master's degree. It is expected that in a few years this department will offer a more complete graduate program leading to the Doctor's degree.

There is an active local chapter of the American Chemical Society which brings outside speakers of considerable note.

LIVING CONDITIONS: Members of the staff of the Northern Regional Research Laboratory always receive a warm welcome by the citizens of Peoria because of the high regard with which the community holds the Laboratory. Although there is a scarcity of rooms, apartments, and houses in Peoria as there is all over the country, our employees have been successful in finding suitable living quarters. Real estate owners frequently call the Laboratory to make known the availability of rooms or other living quarters. The Laboratory is located in a residential area, in many cases within walking distance of employee residences. The Personnel Office assists prospective employees in locating suitable living quarters.

FOR FURTHER INFORMATION: Write or visit the Northern Regional Research Laboratory, 825 N. University Avenue, Peoria, Illinois.



